

Claims

1. A fuel injector (1) having a piezoelectric actuator (2) directly actuating an injection valve member (20), which piezoelectric actuator acts on a booster piston (15), and a face end (18) of the booster piston (15) acts on a hydraulic coupling chamber (19) for actuating the injection valve member (20), and the piezoelectric actuator (2) is received in a hollow chamber (14) in the injector housing (27), which hollow chamber is filled with a fuel volume (5) that is under high pressure, characterized in that the diameter (17) (d_2) of a sealing edge (9) in the actuator base region (6) corresponds to the diameter (16) (d_1) of the booster piston (15).
2. The fuel injector in accordance with claim 1, characterized in that the piezoelectric actuator (2), on its head region (12), is solidly joined to the booster piston (15).
3. The fuel injector in accordance with claim 1, characterized in that a face end (18) of the booster piston (15), acting on a hydraulic coupling chamber (19), forms a larger hydraulically operative face than a face end (21) of the injection valve member (20) defining the hydraulic coupling chamber (19).
4. The fuel injector in accordance with claim 1, characterized in that the piezoelectric actuator (2) is surrounded by a potting material (11).

5. The fuel injector in accordance with claim 1, characterized in that the hollow chamber (4) in the injector housing (27) surrounding the piezoelectric actuator (2) acts on a nozzle chamber inlet (22) extending to a nozzle chamber (23).
6. The fuel injector in accordance with claim 1, characterized in that electrical terminals (10) for supplying current to the piezoelectric actuator (2) are guided by a threaded portion (8) located above the actuator base region (6).
7. The fuel injector in accordance with claim 1, characterized in that the a sealing edge (9), cooperating with a beveled portion of the injector housing (27) and embodied in the base region (6) of the piezoelectric actuator (2) seals off the hollow chamber (4), which is filled with a fuel volume (5) at high pressure, from the threaded portion (8).
8. The fuel injector in accordance with claim 1, characterized in that the piezoelectric actuator (2), above a connecting face (14) with the booster piston (15), has a constricted portion (13).